New England Common Assessment Program

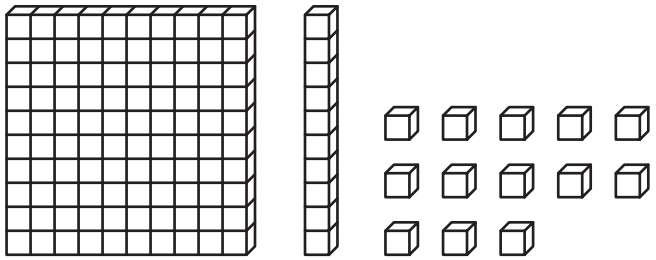
Released Items 2008

Grade 3 Mathematics

Mathematics

Items with this symbol were selected from Session One—no calculators or other mathematics tools allowed.

1 Look at these blocks.



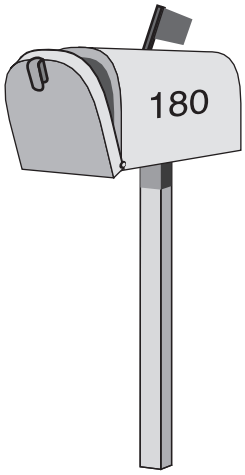
Key

represents 1

What is the total value of these blocks?

- A. 2 hundreds + 1 ten + 3 ones
- B. 2 hundreds + 2 tens + 13 ones
- C. 1 hundred + 2 tens + 3 ones
- D. 1 hundred + 1 ten + 3 ones

2 Look at this mailbox.



What number is on the mailbox?

- A. eighteen
- B. eighteen hundred
- C. one hundred eight
- D. one hundred eighty

❸ Look at this chart.

Stars Earned

Student	Number of Stars
Anna	173
Carla	184
Erin	198
Holly	177
Judy	201
Susan	189

Which student earned more stars than Carla but fewer stars than Erin?

- ○ A. Anna
- ○ B. Holly
- ○ C. Judy
- ○ D. Susan

❹ Jerry had some stickers. Then his sister gave him 6 more stickers. Now Jerry has 14 stickers. How many stickers did Jerry start with?

- ○ A. 6
- ○ B. 8
- ○ C. 12
- ○ D. 20

❺ Ned took 27 photos of animals and 14 photos of his friends at a zoo. How many photos did Ned take in all?

- ○ A. 13
- ○ B. 31
- ○ C. 40
- ○ D. 41

6 Kari bought juice for $0.86. She paid with a one-dollar bill. Which set of coins shows the correct amount of change Kari received?

○ A.

○ B.

○ C.

○ D.

7 Mandy had $0.62. Then she earned 2 quarters. Which amount of money has the same value as the money Mandy has now?

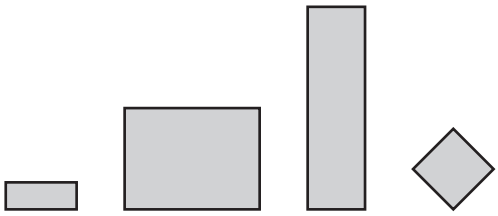
○ A.

○ B.

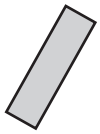
○ C.

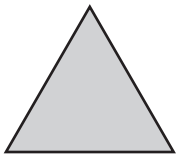
○ D.

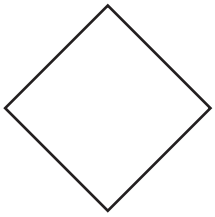
8 Look at this set of shapes.



Which shape also belongs in this set?

○ A. 

○ B. 

○ C. 

○ D. 

9 Look at this pattern.

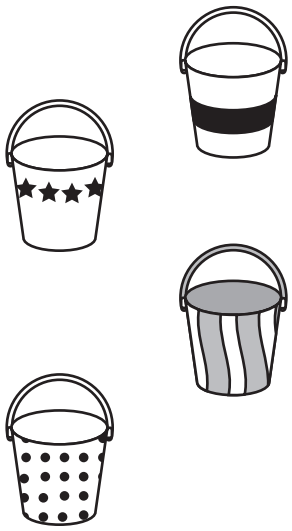
46, 37, 28, __?__, 10, 1

What number is missing?

○ A. 9
○ B. 18
○ C. 19
○ D. 20

10 Michelle chooses one pail and one shovel from the pails and shovels shown below.

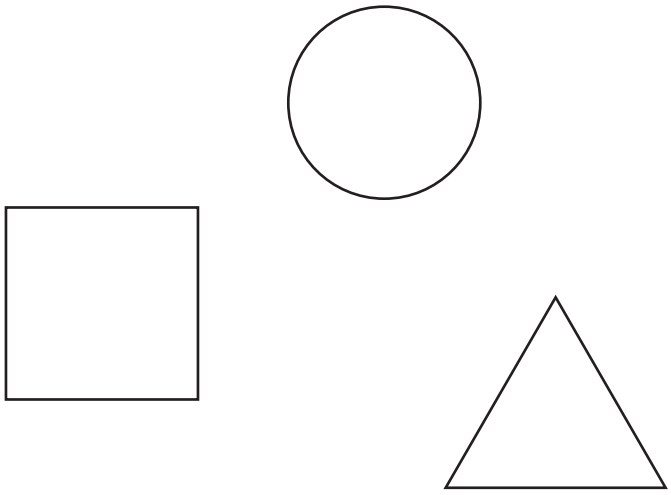
Pails **Shovels**



How many different ways can Michelle choose one pail and one shovel?

○ A. 2
○ B. 4
○ C. 6
○ D. 8

11 Look at this set of shapes.

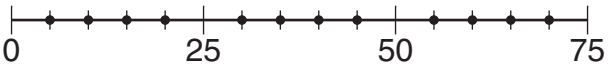


Tad painted each shape a color.

- He painted $\frac{1}{3}$ of the shapes in this set blue.
- He painted the rest of the shapes red.

What **fraction** of the set of shapes did Tad paint red?

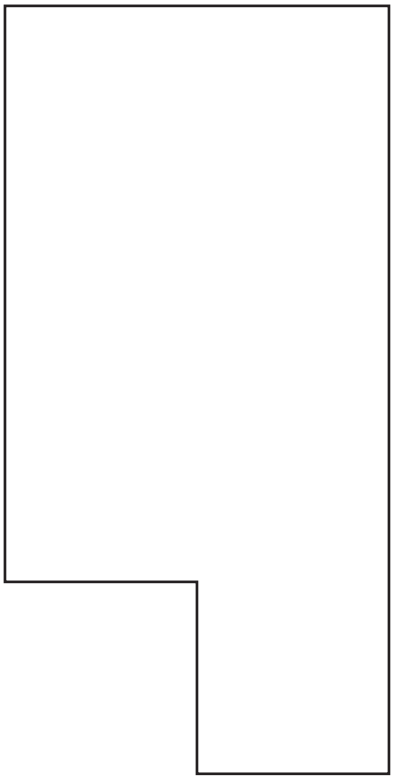
⓬ Look at this number line.



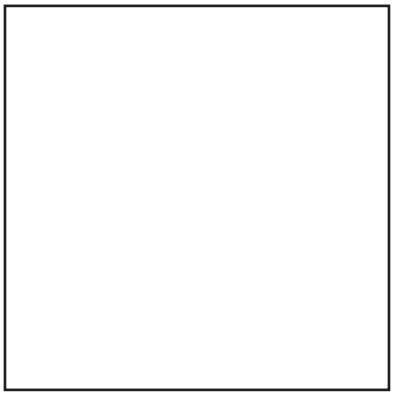
Circle the dot that represents 65.

13 Omar and Wendy put square-inch tiles next to each other to make these shapes.

Omar's Shape



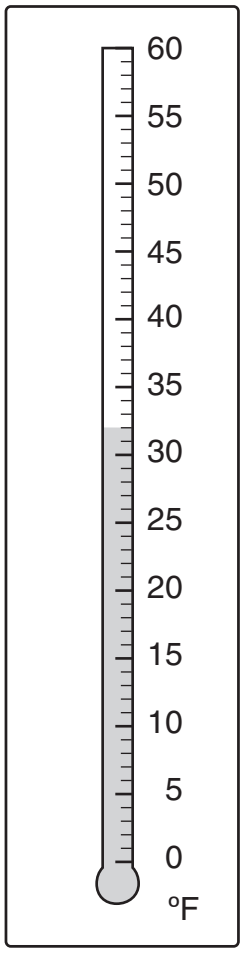
Wendy's Shape



How many more square-inch tiles did Omar use than Wendy?

_____ square-inch tiles

14 This thermometer shows the temperature at 6:00 A.M.



a. What was the temperature at 6:00 A.M.?

_____ °F

At 10:00 A.M. the temperature was 8 degrees warmer than it was at 6:00 A.M.

b. What was the temperature at 10:00 A.M.?

_____ °F

15 a. Write a number on the line below to make this number sentence true.

$10 - \_\_\_\_\_ = 3$

b. Write a different number on each of the lines below to make this number sentence true.

$\_\_\_\_\_ + \_\_\_\_\_ + 1 = 8$

16 The players on a soccer team voted on a name for their team. Each player voted one time. This tally chart shows how many players voted for each name.

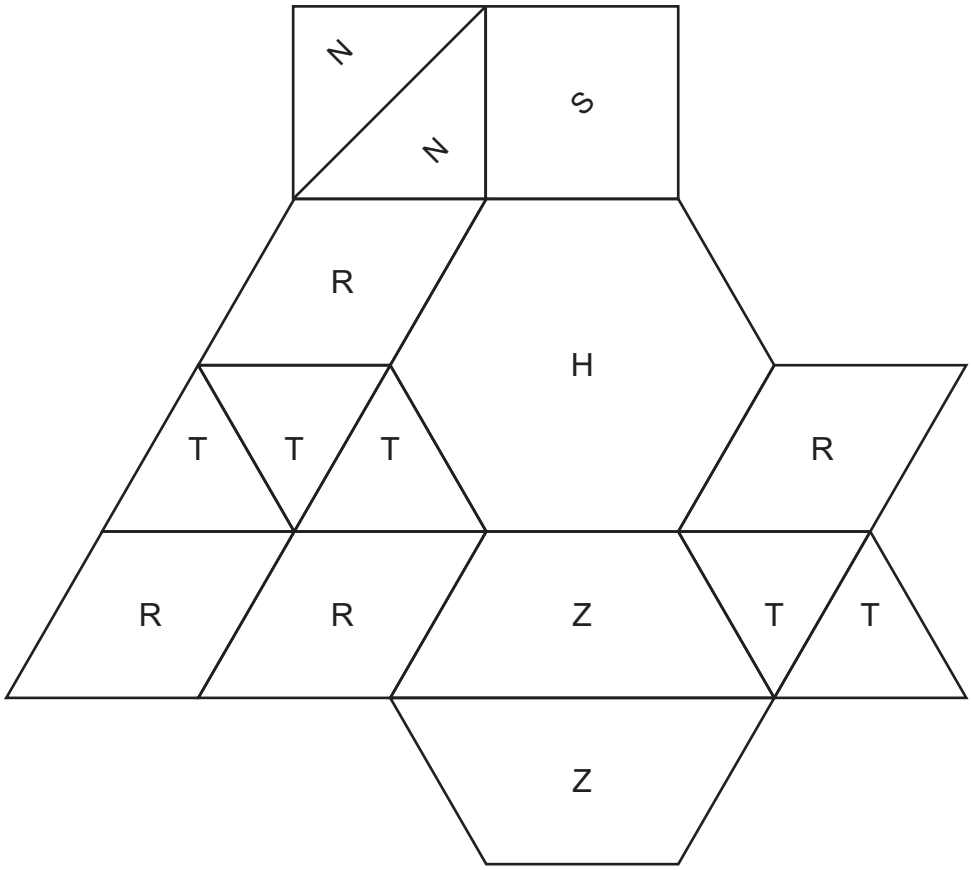
Name	Number of Votes
Tigers	𝍸 |
Rockets	|||
Sharks	𝍸 ||
Bobcats	||||

a. How many players voted altogether?

b. Write a different question that can be answered using data from this tally chart.

New England Common Assessment Program
Mathematics Tool Kit – Grade 3

Use the shapes to answer questions on the mathematics test.



square-inch tile	square-inch tile	square-inch tile	square-inch tile	square-inch tile
square-inch tile	square-inch tile	square-inch tile	square-inch tile	square-inch tile

Grade 3 Mathematics Released Item Information

Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Tools Allowed				✓	✓	✓	✓							✓		
Content Strand[1]	NO	NO	NO	NO	NO	NO	NO	GM	FA	DP	NO	NO	GM	GM	FA	DP
GLE Code	2-1	2-2	2-2	2-3	2-3	2-5	2-5	2-1	2-1	2-4	2-1	2-2	2-6	2-7	2-4	2-1
Depth of Knowledge Code	2	1	2	1	1	2	2	2	2	2	2	2	2	2	2	3
Item Type[2]	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	SA	SA	SA	SA	SA	SA
Answer Key	C	D	D	B	D	D	D	A	C	D						
Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2

[1]Content Strand: NO = Numbers & Operations, GM = Geometry & Measurement, FA = Functions & Algebra, DP = Data, Statistics, & Probability

[2]Item Type: MC = Multiple Choice, SA = Short Answer

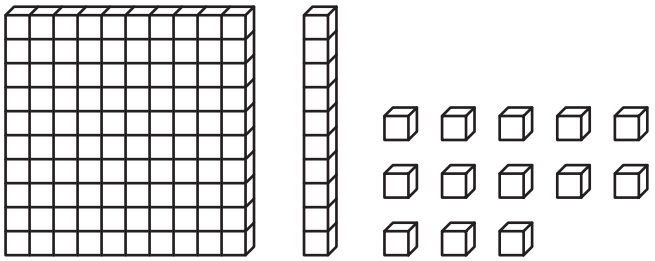
New England Common Assessment Program

Released Items
Support Materials
2008

Grade 3
Mathematics

N&O 2.1 **Demonstrates conceptual understanding of rational numbers with respect to: whole numbers** from 0 to 199 using place value, by applying the concepts of equivalency in composing or decomposing numbers (e.g., 34 = 17 + 17; 34 = 29 + 5); and in expanded notation (e.g., 141 = 1 hundred + 4 tens + 1 one or 141 = 100 + 40 + 1) **using models, explanations, or other representations**; and **positive fractional numbers** (benchmark fractions: *a*/2, *a*/3, or *a*/4, where *a* is a whole number greater than 0 and less than or equal to the denominator) as a part to whole relationship in area and set models where the denominator is equal to the number of parts in the whole **using models, explanations, or other representations**.

1 Look at these blocks.

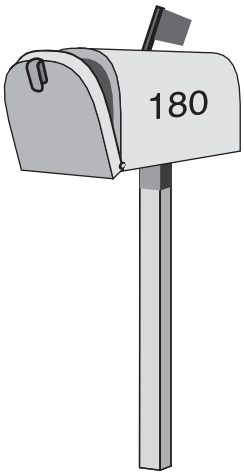


What is the total value of these blocks?

- ○ A. 2 hundreds + 1 ten + 3 ones
- ○ B. 2 hundreds + 2 tens + 13 ones
- ○ C. 1 hundred + 2 tens + 3 ones
- ○ D. 1 hundred + 1 ten + 3 ones

N&O 2.2 **Demonstrates understanding of the relative magnitude of numbers** from 0 to 199 by ordering whole numbers; by comparing whole numbers to each other or to benchmark whole numbers (10, 25, 50, 75, 100, 125, 150, or 175); by demonstrating an understanding of the relation of inequality when comparing whole numbers by using "1 more", "1 less", "10 more", "10 less", "100 more", or "100 less"; or by connecting number words and numerals to the quantities they represent using models, number lines, or explanations.

2 Look at this mailbox.



What number is on the mailbox?

- ○ A. eighteen
- ○ B. eighteen hundred
- ○ C. one hundred eight
- ○ D. one hundred eighty

N&O 2.2 **Demonstrates understanding of the relative magnitude of numbers** from 0 to 199 by ordering whole numbers; by comparing whole numbers to each other or to benchmark whole numbers (10, 25, 50, 75, 100, 125, 150, or 175); by demonstrating an understanding of the relation of inequality when comparing whole numbers by using "1 more", "1 less", "10 more", "10 less", "100 more", or "100 less"; or by connecting number words and numerals to the quantities they represent using models, number lines, or explanations.

3 Look at this chart.

Stars Earned

Student	Number of Stars
Anna	173
Carla	184
Erin	198
Holly	177
Judy	201
Susan	189

Which student earned more stars than Carla but fewer stars than Erin?

- ○ A. Anna
- ○ B. Holly
- ○ C. Judy
- ○ D. Susan

N&O 2.3 **Demonstrates conceptual understanding of mathematical operations involving** addition and subtraction of whole numbers by solving problems involving joining actions, separating actions, part-part whole relationships, and comparison situations; and addition of multiple one-digit whole numbers.

4 Jerry had some stickers. Then his sister gave him 6 more stickers. Now Jerry has 14 stickers. How many stickers did Jerry start with?

- ○ A. 6
- ○ B. 8
- ○ C. 12
- ○ D. 20

N&O 2.3 **Demonstrates conceptual understanding of mathematical operations involving** addition and subtraction of whole numbers by solving problems involving joining actions, separating actions, part-part whole relationships, and comparison situations; and addition of multiple one-digit whole numbers.

5 Ned took 27 photos of animals and 14 photos of his friends at a zoo. How many photos did Ned take in all?

- ○ A. 13
- ○ B. 31
- ○ C. 40
- ○ D. 41

N&O 2.5 **Demonstrates understanding of monetary value** by adding coins together to a value no greater than $1.99 and representing the result in dollar notation; making change from $1.00 or less, or recognizing equivalent coin representations of the same value (values up to $1.99).

6 Kari bought juice for $0.86. She paid with a one-dollar bill. Which set of coins shows the correct amount of change Kari received?

○ A. 

○ B. 

○ C. 

○ D. 

N&O 2.5 **Demonstrates understanding of monetary value** by adding coins together to a value no greater than $1.99 and representing the result in dollar notation; making change from $1.00 or less, or recognizing equivalent coin representations of the same value (values up to $1.99).

7 Mandy had $0.62. Then she earned 2 quarters. Which amount of money has the same value as the money Mandy has now?

○ A.

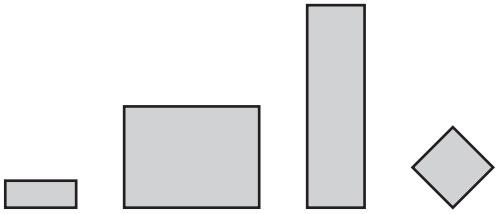
○ B.

○ C.

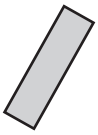
○ D.

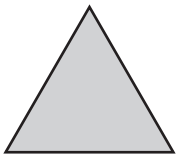
G&M 2.1 **Uses properties, attributes, composition, or decomposition to sort or classify** polygons or objects by a combination of two or more non-measurable or measurable attributes.

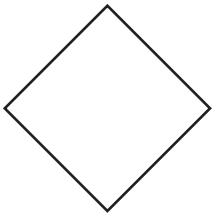
8 Look at this set of shapes.



Which shape also belongs in this set?

○ A. 

○ B. 

○ C. 

○ D. 

F&A 2.1 **Identifies and extends to specific cases a variety of patterns** (linear and non-numeric) represented in models, tables, or sequences by extending the pattern to the next element, or finding a missing element (e.g., 2, 4, 6, ___, 10).

9 Look at this pattern.

46, 37, 28, ___?___, 10, 1

What number is missing?

- ○ A. 9
- ○ B. 18
- ○ C. 19
- ○ D. 20

DSP 2.4 **Uses counting techniques to solve problems** involving combinations using a variety of strategies (e.g., student diagrams, organized lists, tables, tree diagrams, or others); (e.g., How many ways can you make 50 cents using nickels, dimes, and quarters?).

10 Michelle chooses one pail and one shovel from the pails and shovels shown below.

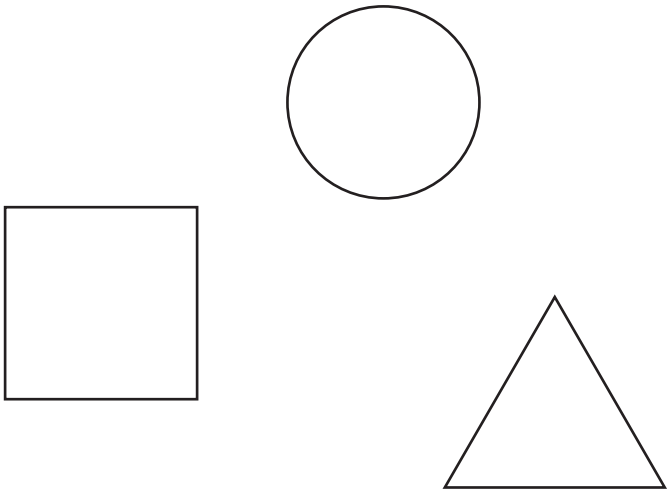
Pails **Shovels**

How many different ways can Michelle choose one pail and one shovel?

- ○ A. 2
- ○ B. 4
- ○ C. 6
- ○ D. 8

N&O 2.1 **Demonstrates conceptual understanding of rational numbers with respect to: whole numbers** from 0 to 199 using place value, by applying the concepts of equivalency in composing or decomposing numbers (e.g., 34 = 17 + 17; 34 = 29 + 5); and in expanded notation (e.g., 141 = 1 hundred + 4 tens + 1 one or 141 = 100 + 40 + 1) **using models, explanations, or other representations**; and **positive fractional numbers** (benchmark fractions: *a*/2, *a*/3, or *a*/4, where *a* is a whole number greater than 0 and less than or equal to the denominator) as a part to whole relationship in area and set models where the denominator is equal to the number of parts in the whole **using models, explanations, or other representations**.

11 Look at this set of shapes.



Tad painted each shape a color.

- He painted $\frac{1}{3}$ of the shapes in this set blue.
- He painted the rest of the shapes red.

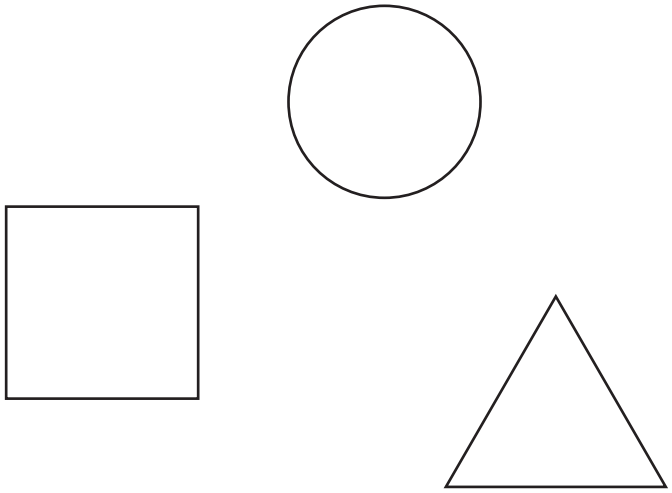
What **fraction** of the set of shapes did Tad paint red?

Scoring Guide

Score	Description
1	Student gives correct answer, $\frac{\mathbf{2}}{\mathbf{3}}$ **or equivalent**.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

SCORE POINT 1
(EXAMPLE A)

11 Look at this set of shapes.



Tad painted each shape a color.

- He painted $\frac{1}{3}$ of the shapes in this set blue.
- He painted the rest of the shapes red.

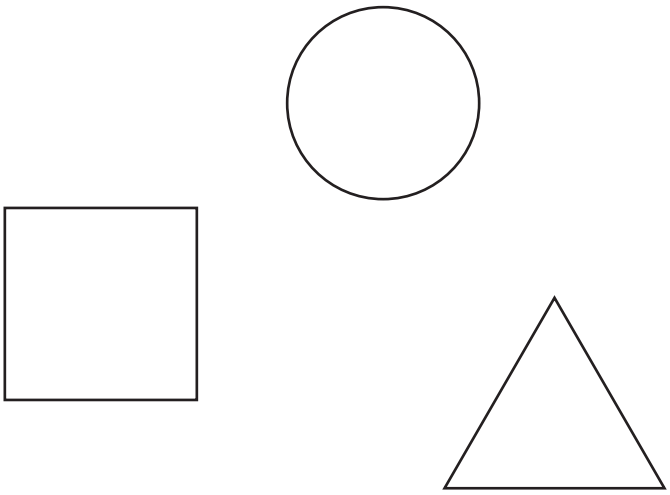
What **fraction** of the set of shapes did Tad paint red?

he painted 2 out of 3 red.

Student's response is correct. The verbal description of the fraction is appropriate.

SCORE POINT 1
(EXAMPLE B)

11 Look at this set of shapes.



Tad painted each shape a color.

- He painted $\frac{1}{3}$ of the shapes in this set blue.
- He painted the rest of the shapes red.

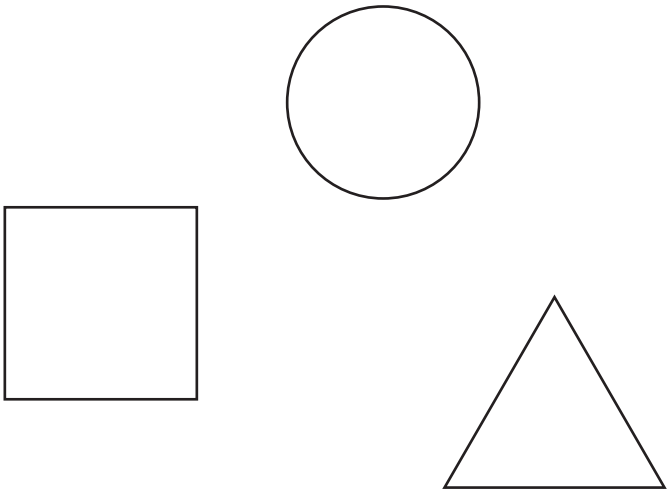
What **fraction** of the set of shapes did Tad paint red?

$\frac{2}{3}$ $\frac{4}{6}$ $\frac{6}{9}$

Student's response is correct. Additional information given does not conflict with correct response.

SCORE POINT 0
(EXAMPLE A)

11 Look at this set of shapes.



Tad painted each shape a color.

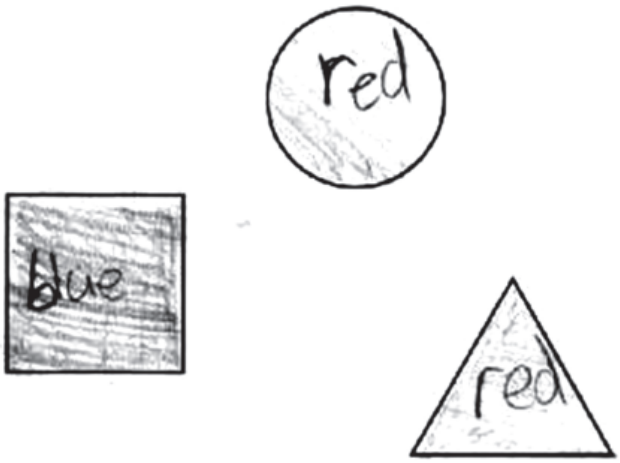
- He painted $\frac{1}{3}$ of the shapes in this set blue.
- He painted the rest of the shapes red.

What **fraction** of the set of shapes did Tad paint red?

Student's response is incorrect.

SCORE POINT 0
(EXAMPLE B)

11 Look at this set of shapes.



Tad painted each shape a color.

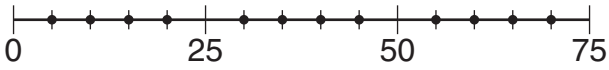
- He painted $\frac{1}{3}$ of the shapes in this set blue.
- He painted the rest of the shapes red.

What **fraction** of the set of shapes did Tad paint red?

Student does not answer the question.

N&O 2.2 **Demonstrates understanding of the relative magnitude of numbers** from 0 to 199 by ordering whole numbers; by comparing whole numbers to each other or to benchmark whole numbers (10, 25, 50, 75, 100, 125, 150, or 175); by demonstrating an understanding of the relation of inequality when comparing whole numbers by using "1 more", "1 less", "10 more", "10 less", "100 more", or "100 less"; or by connecting number words and numerals to the quantities they represent using models, number lines, or explanations.

12 Look at this number line.



Circle the dot that represents 65.

Scoring Guide

Score	Description
1	Student circles correct dot (third to the right of 50).
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

Score Point 1
(Example A)

12 Look at this number line.

Circle the dot that represents 65.

Student's response is correct.

Score Point 0
(Example A)

12 Look at this number line.

Circle the dot that represents 65.

Student's response is incorrect.

SCORE POINT 0
(EXAMPLE B)

12 Look at this number line.

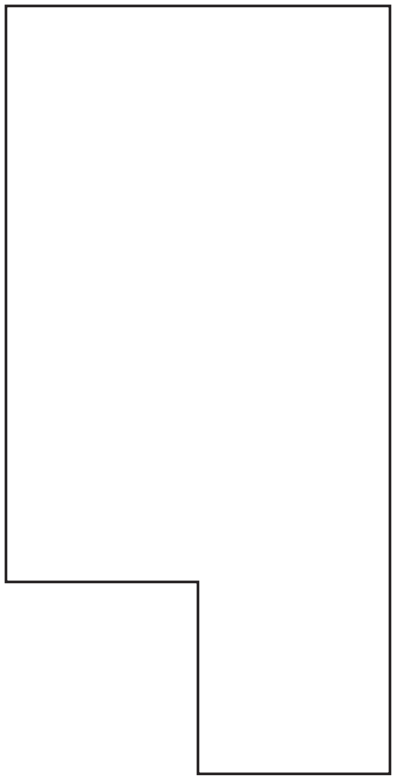
Circle the dot that represents 65.

Student's response is incorrect.

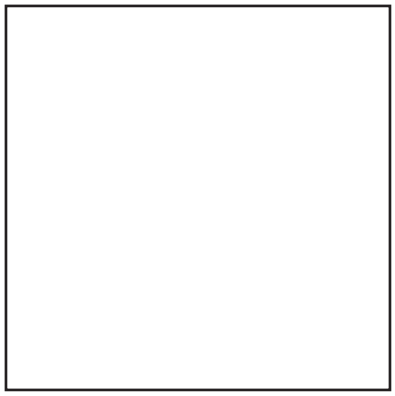
G&M 2.6 **Demonstrates conceptual understanding of perimeter and area** by using models or manipulatives to surround and cover polygons.

13 Omar and Wendy put square-inch tiles next to each other to make these shapes.

Omar's Shape



Wendy's Shape



How many more square-inch tiles did Omar use than Wendy?

_____ square-inch tiles

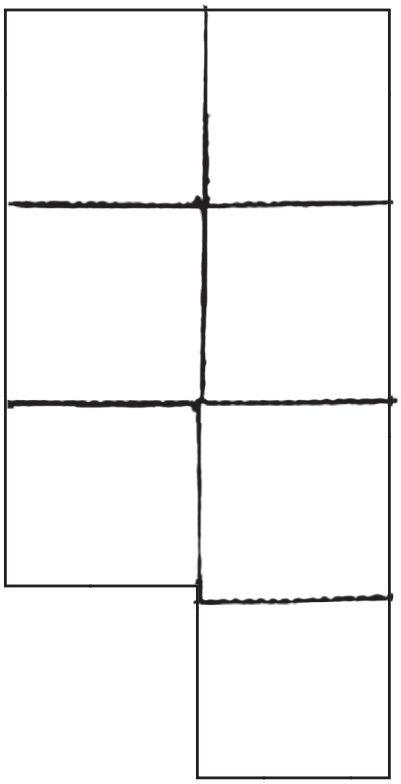
Scoring Guide

Score	Description
1	Student gives correct answer, **3**.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

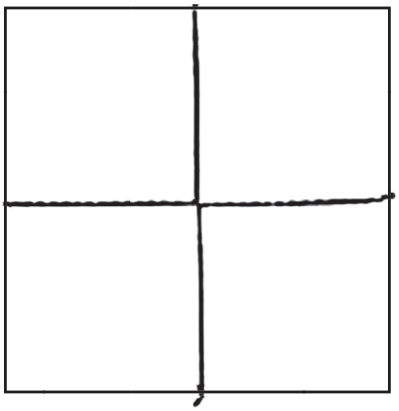
SCORE POINT 1
(EXAMPLE A)

13 Omar and Wendy put square-inch tiles next to each other to make these shapes.

Omar's Shape



Wendy's Shape



How many more square-inch tiles did Omar use than Wendy?

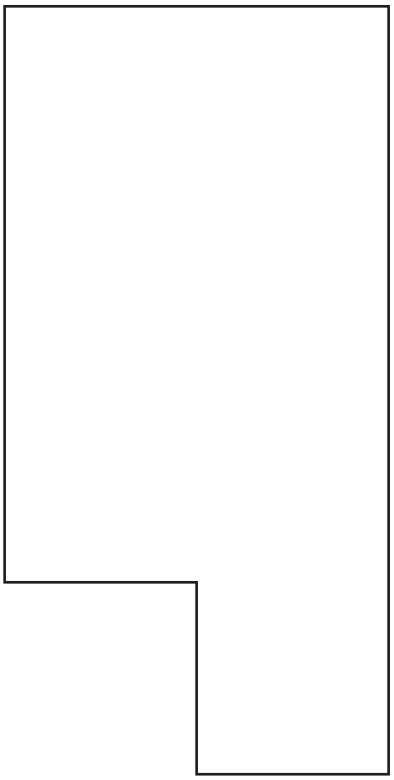
3 square-inch tiles

Student's response is correct.

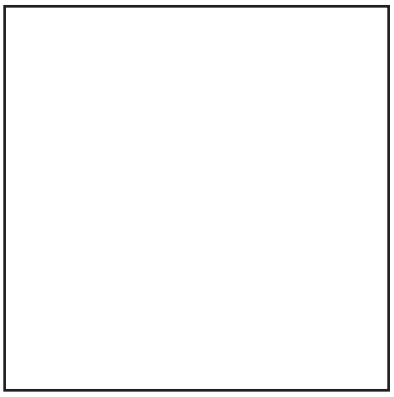
Score Point 1
(Example B)

13 Omar and Wendy put square-inch tiles next to each other to make these shapes.

Omar's Shape



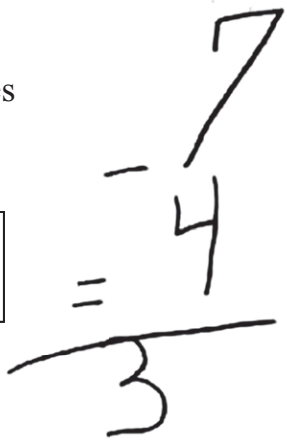
Wendy's Shape



How many more square-inch tiles did Omar use than Wendy?

3 square-inch tiles

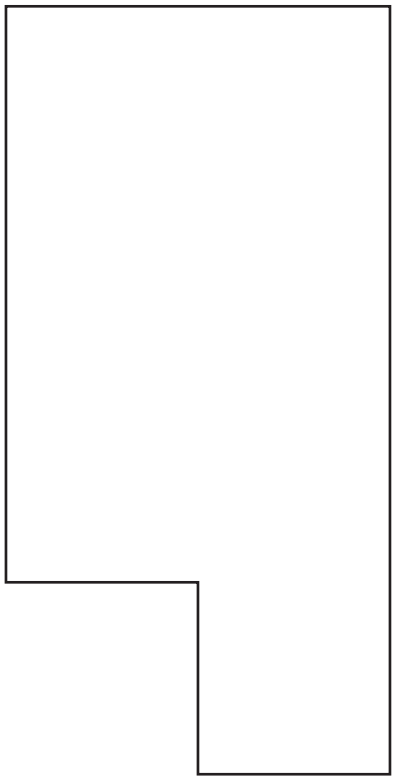
Student's response is correct.
(Showing work is not required.)



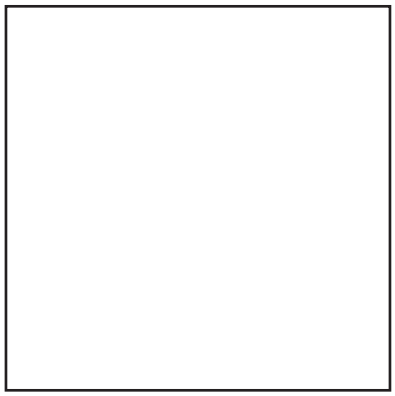
SCORE POINT 0
(EXAMPLE A)

13 Omar and Wendy put square-inch tiles next to each other to make these shapes.

Omar's Shape



Wendy's Shape



How many more square-inch tiles did Omar use than Wendy?

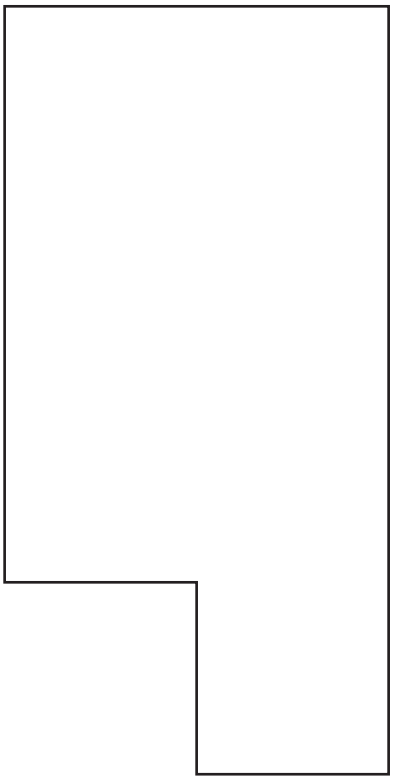
11 square-inch tiles

Student's response is incorrect.

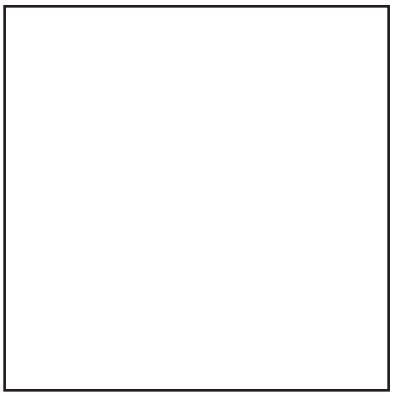
SCORE POINT 0
(EXAMPLE B)

13 Omar and Wendy put square-inch tiles next to each other to make these shapes.

Omar's Shape



Wendy's Shape



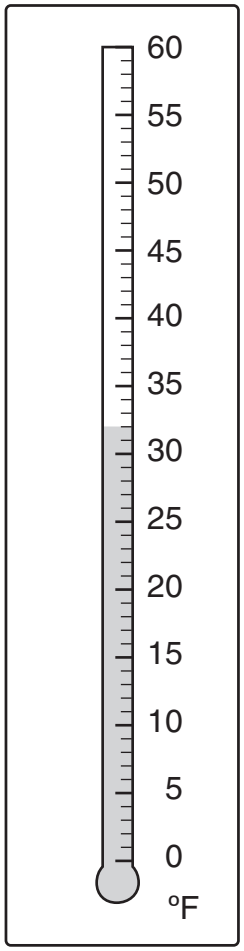
How many more square-inch tiles did Omar use than Wendy?

7 square-inch tiles

Student's response is incorrect.

G&M 2.7 Measures and uses units of measures appropriately and consistently, and makes conversions within systems when solving problems across the content strands.

14 This thermometer shows the temperature at 6:00 A.M.



a. What was the temperature at 6:00 A.M.?

_____ °F

At 10:00 A.M. the temperature was 8 degrees warmer than it was at 6:00 A.M.

b. What was the temperature at 10:00 A.M.?

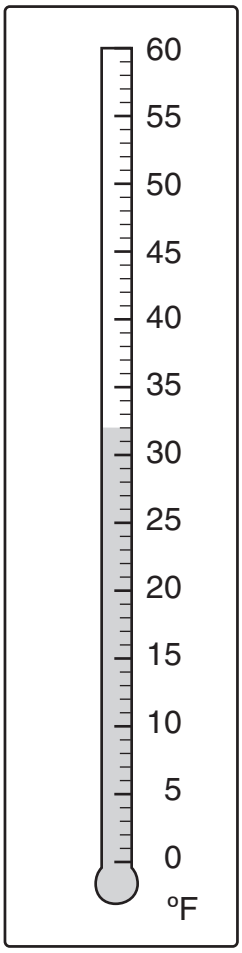
_____ °F

Scoring Guide

Score	Description
2	Student gives correct answer in part a, **32**, and part b, **40**.
1	Student gives correct answer in part a only. OR Student gives correct answer in part b only. OR Student gives correct answer in part b based on incorrect answer in part a.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

SCORE POINT 2
(EXAMPLE A)

14 This thermometer shows the temperature at 6:00 A.M.



a. What was the temperature at 6:00 A.M.?

32 °F

a) Student's response is correct.

At 10:00 A.M. the temperature was 8 degrees warmer than it was at 6:00 A.M.

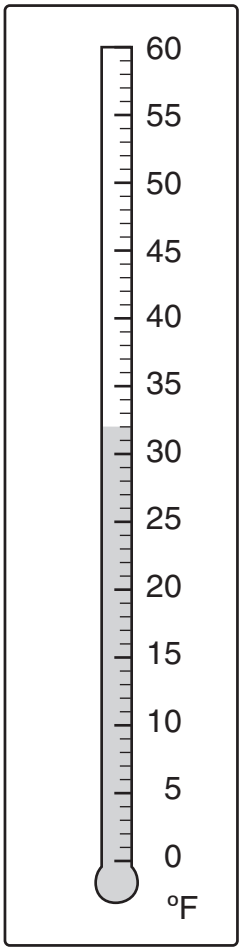
b. What was the temperature at 10:00 A.M.?

40 °F

b) Student's response is correct.

SCORE POINT 1
(EXAMPLE A)

14 This thermometer shows the temperature at 6:00 A.M.



a. What was the temperature at 6:00 A.M.?

34 °F

a) Student's response is incorrect.

At 10:00 A.M. the temperature was 8 degrees warmer than it was at 6:00 A.M.

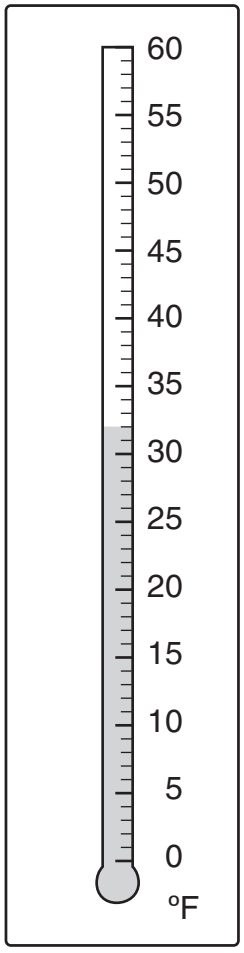
b. What was the temperature at 10:00 A.M.?

42 °F

b) Student's response is correct based on the response to part a.

Score Point 1
(Example B)

14 This thermometer shows the temperature at 6:00 A.M.



a. What was the temperature at 6:00 A.M.?

32 °F

a) Student's response is correct.

At 10:00 A.M. the temperature was 8 degrees warmer than it was at 6:00 A.M.

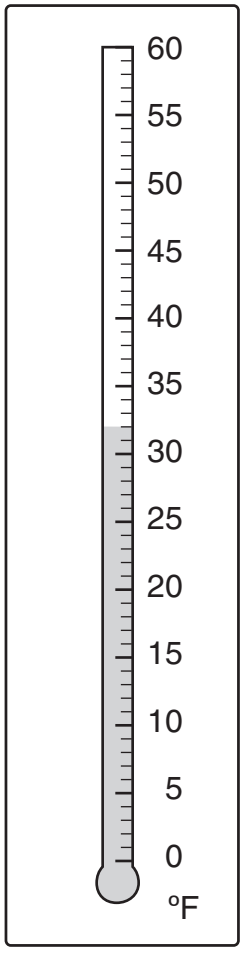
b. What was the temperature at 10:00 A.M.?

42 °F

b) Student's response is incorrect.

SCORE POINT 0
(EXAMPLE A)

14 This thermometer shows the temperature at 6:00 A.M.



a. What was the temperature at 6:00 A.M.?

34 °F

a) Student's response is incorrect.

At 10:00 A.M. the temperature was 8 degrees warmer than it was at 6:00 A.M.

b. What was the temperature at 10:00 A.M.?

32 °F

b) Student's response is incorrect, and incorrect based on the response to part a.

F&A 2.4 **Demonstrates conceptual understanding of equality** by finding the value that will make an open sentence true (e.g., 2 + □ = 7). (limited to one operation and limited to use addition or subtraction)

15 a. Write a number on the line below to make this number sentence true.

$10 - \_\_\_\_\_ = 3$

b. Write a different number on each of the lines below to make this number sentence true.

$\_\_\_\_\_ + \_\_\_\_\_ + 1 = 8$

Scoring Guide

Score	Description
2	Student has correct answer in part a, **7**, and part b, **any two numbers that add to 7**.
1	Student has correct answer in one part.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

Score Point 2
(Example A)

15 a. Write a number on the line below to make this number sentence true.

10 – 7 = 3

a) Student's response is correct.

b. Write a different number on each of the lines below to make this number sentence true.

4 + 3 + 1 = 8

b) Student's response is correct.

Score Point 2
(Example B)

15 a. Write a number on the line below to make this number sentence true.

10 – 7 = 3

a) Student's response is correct.

b. Write a different number on each of the lines below to make this number sentence true.

7 + 0 + 1 = 8

b) Student's response is correct.

Score Point 1
(Example A)

15 a. Write a number on the line below to make this number sentence true.

10 – 7 = 3

a) Student's response is correct.

b. Write a different number on each of the lines below to make this number sentence true.

5 + 4 + 1 = 8

b) Student's response is incorrect.

Score Point 1
(Example B)

15 a. Write a number on the line below to make this number sentence true.

10 – 8 = 3

a) Student's response is incorrect.

b. Write a different number on each of the lines below to make this number sentence true.

5 + 2 + 1 = 8

b) Student's response is correct.

SCORE POINT 0
(EXAMPLE A)

15 a. Write a number on the line below to make this number sentence true.

10 – 8 = 3

a) Student's response is incorrect.

b. Write a different number on each of the lines below to make this number sentence true.

8 + 1 + 1 = 8

b) Student's response is incorrect.

DSP 2.1 **Interprets a given representation** (pictographs with one-to-one correspondence, line plots, tally charts, or tables) to answer questions related to the data, or to analyze the data to formulate conclusions. (IMPORTANT: *Analyzes data consistent with concepts and skills in M(DSP)–2–2.)*

16 The players on a soccer team voted on a name for their team. Each player voted one time. This tally chart shows how many players voted for each name.

Name	Number of Votes
Tigers	𝍸 |
Rockets	|||
Sharks	𝍸 ||
Bobcats	||||

a. How many players voted altogether?

b. Write a different question that can be answered using data from this tally chart.

Scoring Guide

Score	Description
2	Student gives correct answer in part a, **20**, and writes an appropriate question in part b.
1	Student gives correct answer in part a only. OR Student writes an appropriate question in part b only.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

SCORE POINT 2
(EXAMPLE A)

16 The players on a soccer team voted on a name for their team. Each player voted one time. This tally chart shows how many players voted for each name.

Name	Number of Votes
Tigers	𝍸 |
Rockets	|||
Sharks	𝍸 ||
Bobcats	||||

a. How many players voted altogether?

20 players

a) Student's response is correct.

b. Write a different question that can be answered using data from this tally chart.

what team had the least amount of votes.

b) Student writes an appropriate question.

SCORE POINT 2
(EXAMPLE B)

16 The players on a soccer team voted on a name for their team. Each player voted one time. This tally chart shows how many players voted for each name.

Name	Number of Votes
Tigers	𝍸 |
Rockets	|||
Sharks	𝍸 ||
Bobcats	||||

a. How many players voted altogether?

20

a) Student's response is correct.

b. Write a different question that can be answered using data from this tally chart.

what is the team's name

b) Student writes an appropriate question.

SCORE POINT 2
(EXAMPLE C)

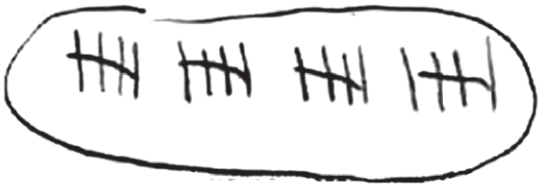
16 The players on a soccer team voted on a name for their team. Each player voted one time. This tally chart shows how many players voted for each name.

Name	Number of Votes
Tigers	𝍸 |
Rockets	|||
Sharks	𝍸 ||
Bobcats	||||

a) Student's response is correct.

a. How many players voted altogether?

20



b. Write a different question that can be answered using data from this tally chart.

How much more votes do Sharks have than Rockets?

b) Student writes an appropriate question.

4 more than Rockets

Note: Additional information given in both parts does not conflict with correct responses.

SCORE POINT 1
(EXAMPLE A)

16 The players on a soccer team voted on a name for their team. Each player voted one time. This tally chart shows how many players voted for each name.

Name	Number of Votes
Tigers	𝍸 |
Rockets	|||
Sharks	𝍸 ||
Bobcats	||||

a. How many players voted altogether?

20 players

a) Student's response is correct.

b. Write a different question that can be answered using data from this tally chart.

How many players all voted?

b) Student does not write a different question.

SCORE POINT 1
(EXAMPLE B)

16 The players on a soccer team voted on a name for their team. Each player voted one time. This tally chart shows how many players voted for each name.

Name	Number of Votes
Tigers	𝍸 |
Rockets	|||
Sharks	𝍸 ||
Bobcats	||||

a) Student's response is incorrect.

a. How many players voted altogether?

19 players voted on a name.

b. Write a different question that can be answered using data from this tally chart.

what team name got the most votes?

b) Student writes an appropriate question.

SCORE POINT 1
(EXAMPLE C)

16 The players on a soccer team voted on a name for their team. Each player voted one time. This tally chart shows how many players voted for each name.

Name	Number of Votes
Tigers	𝍸 |
Rockets	|||
Sharks	𝍸 ||
Bobcats	||||

a) Student's response is correct.

a. How many players voted altogether?

20 players voted altogether.

b. Write a different question that can be answered using data from this tally chart.

The sharks got the most.

b) Student does not write a question.

SCORE POINT 0
(EXAMPLE A)

16 The players on a soccer team voted on a name for their team. Each player voted one time. This tally chart shows how many players voted for each name.

Name	Number of Votes
Tigers	𝍸 |
Rockets	|||
Sharks	𝍸 ||
Bobcats	||||

a. How many players voted altogether?

19

a) Student's response is incorrect.

b. Write a different question that can be answered using data from this tally chart.

why did The sharks get the most votes?

b) Student writes a question that cannot be answered using the data in the chart.